

/ Descriptions

Silicon NPN transistor in a TO-252 Plastic Package.

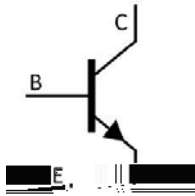
/ Features

Complementary pair with 2SB649AD.

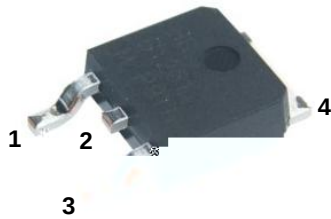
/ Applications

Low frequency power amplifier.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2,4 Collector PIN 3 Emitter

/ h_{FE} Classifications & Marking

h_{FE} Classifications Symbol	B	C	D
h_{FE} Range	60 120	100 200	160 320

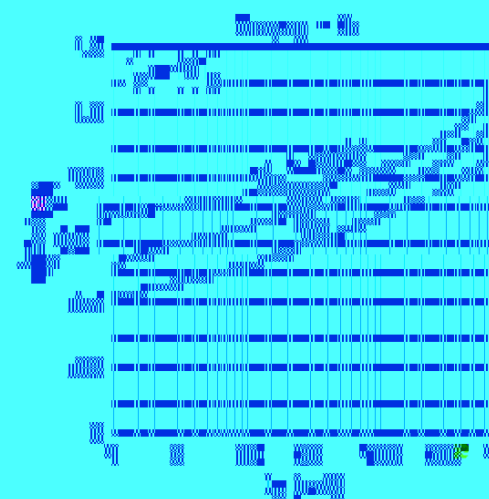
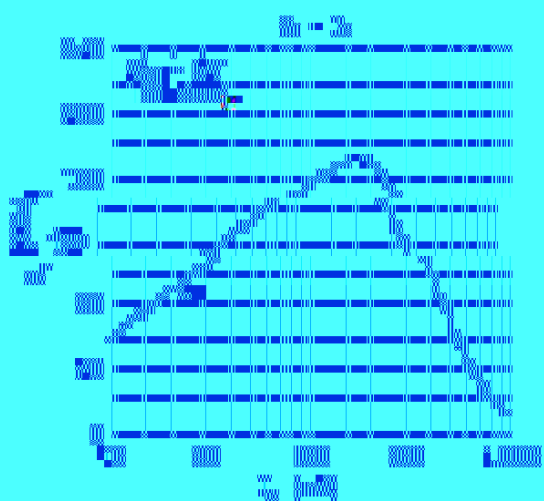
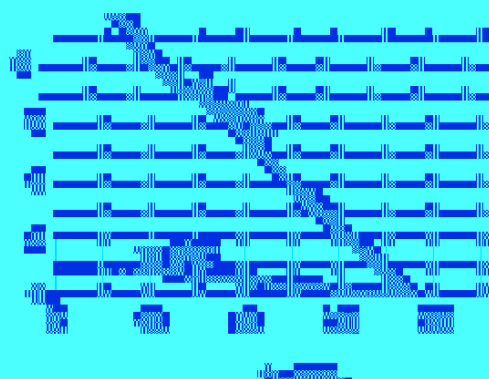
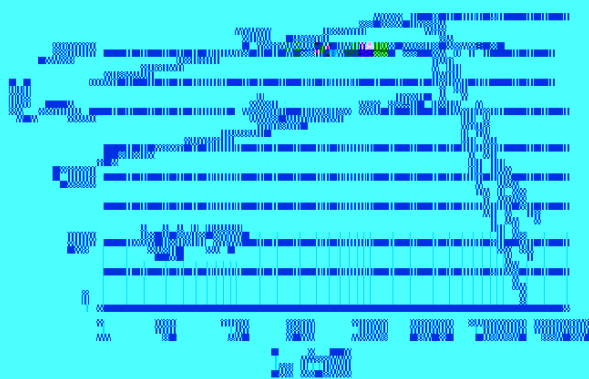
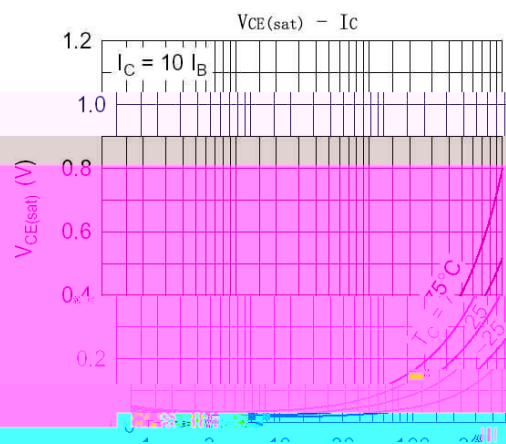
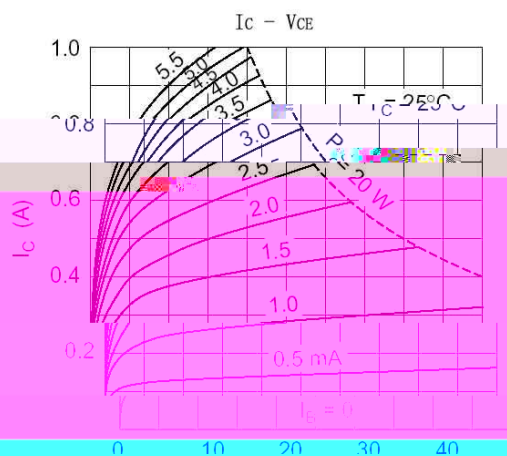
/ Absolute Maximum Ratings($T_a=25^\circ\text{C}$)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	180	V
Collector to Emitter Voltage	V_{CEO}	160	V
Emitter to Base Voltage	V_{EBO}	5.0	V
Collector Current - Continuous	I_C	1.5	A
Collector Current – Continuous(Pulse)	I_{CP}	3.0	A
Collector Power Dissipation	P_C	1.0	W
Collector Power Dissipation	$P_C(T_c=25^\circ\text{C})$	10	W
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	

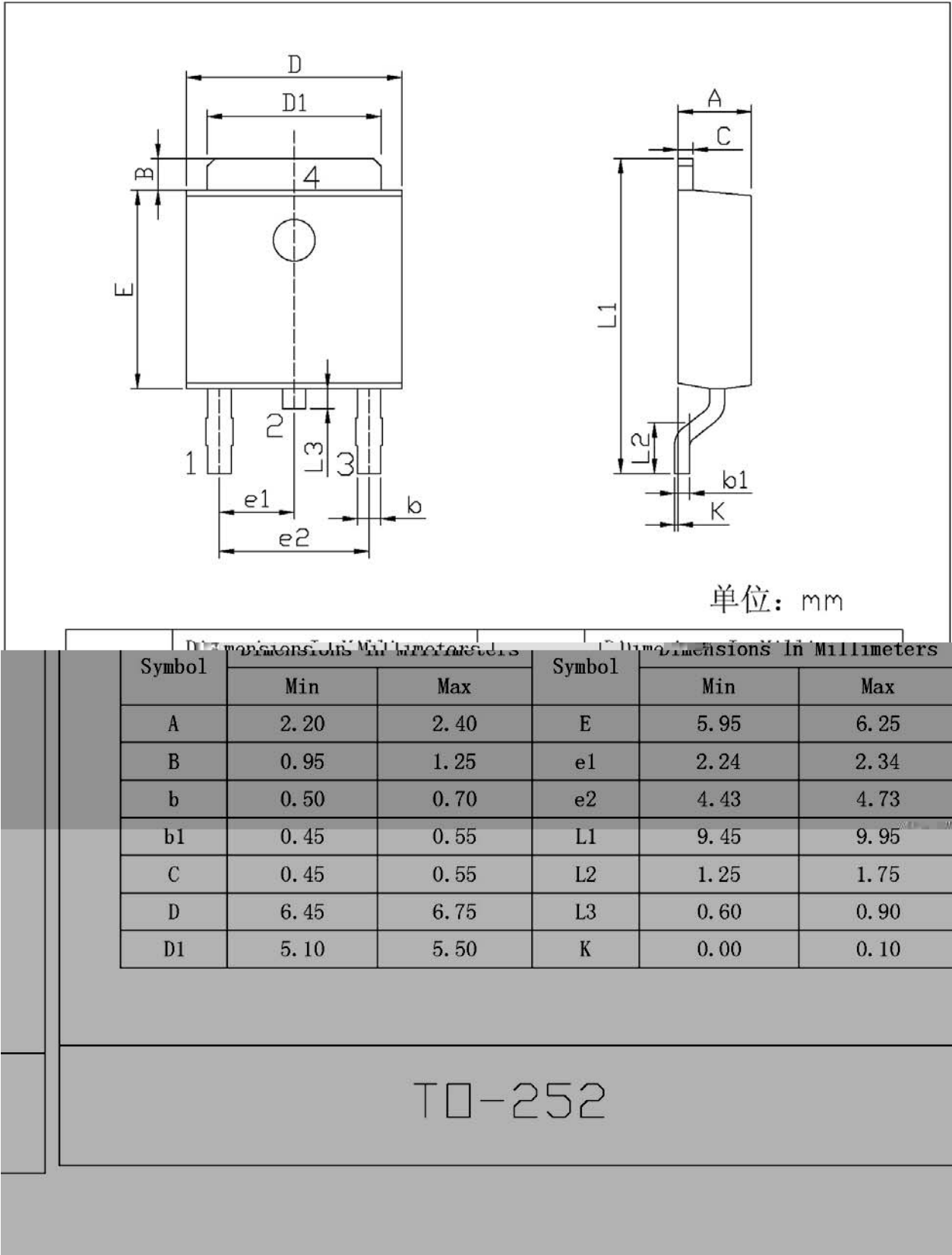
/ Electrical Characteristics($T_a=25^\circ\text{C}$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	$I_C=1.0\text{mA}$ $I_E=0$	180			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=10\text{mA}$ $R_{BE}=\infty$	160			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=1.0\text{mA}$ $I_C=0$	5.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=160\text{V}$ $I_E=0$			10	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=5.0\text{V}$ $I_C=150\text{mA}$	60		320	
	$h_{FE(2)}$	$V_{CE}=5.0\text{V}$ $I_C=500\text{mA}$	30			
Base to Emitter Voltage	V_{BE}	$V_{CE}=5.0\text{V}$ $I_C=150\text{mA}$			1.5	V
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=500\text{mA}$ $I_B=50\text{mA}$			1.0	V
Transition Frequency	f_T	$V_{CE}=5.0\text{V}$ $I_C=150\text{mA}$		140		MHz
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}$ $f=1.0\text{MHz}$ $I_E=0$		14		pF

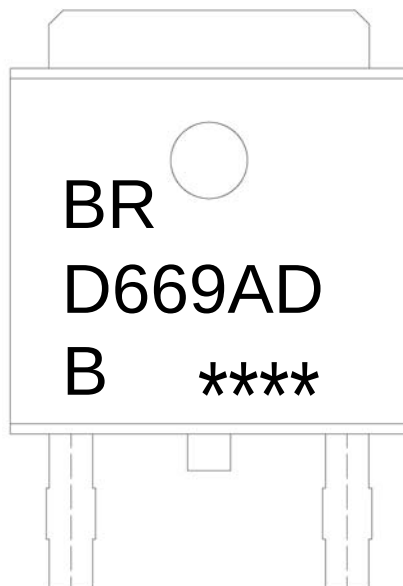
/ Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



BR

h_{FE}

Note:

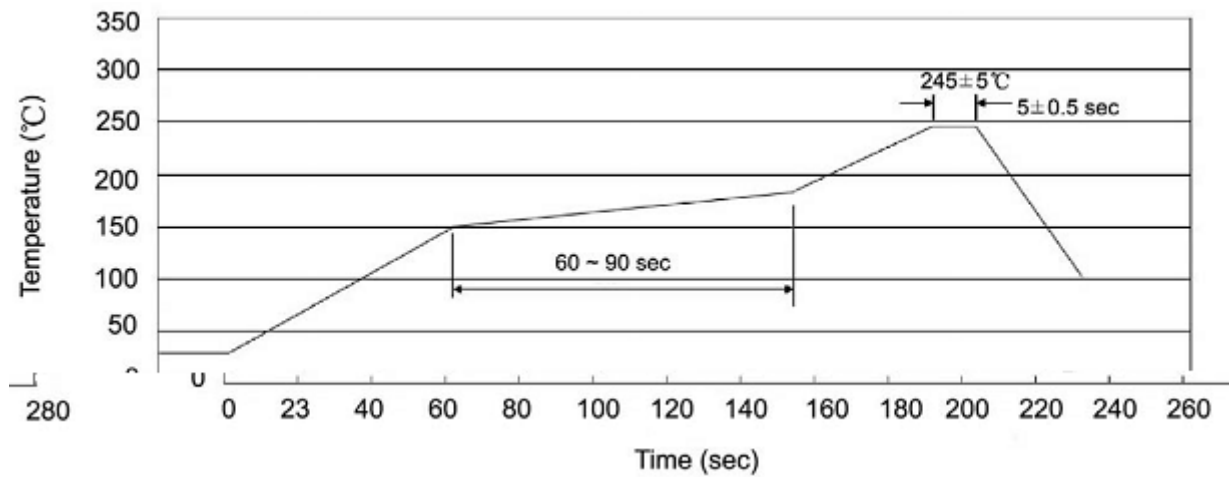
BR: Company Code

D669AD: Product Type.

B: h_{FE} Classifications Symbol

****: Lot No. Code, code change with Lot No.

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Note:

- 1

25 150

60 90sec;

1.Preheating:25~150 °C, Time:60~90sec.
- 2

245 5

5 0.5sec;

2.Peak Temp.:245 ± 5 °C, Duration:5 ± 0.5sec.
- 3

2 10

/sec.

3. Cooling Speed: 2~10 °C/sec.

/ Resistance to Soldering Heat Test Conditions

260 ± 5 10 ± 1 sec. Temp.:260±5 Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units		Dimension	(unit mm ³)
	Units/Reel	Reels/Inner Box		